AMENDMENT TO THE CLAIMS

Claims 2-20. Cancelled.

21. (New) An integrated electric motor and drive, comprising:

a motor including a stator and a rotor which define an energy storage gap therebetween, the stator including three stator coils and the rotor being supported within the motor to rotate relative to the three stator coils;

an energy storage capacitor coupled in series with the three stator coils and the energy storage gap to form a resonant LCR circuit;

a rotary shaft encoder configured to detect a rotational position of the rotor with respect to the three stator coils; and

a switch controller configured to energize the three stator coils based on the rotational position of the rotor as detected by the rotary shaft encoder, the three stator coils being energized at one-third duty cycle such that the rotor field is normal to the stator field by about 90° and no two stator coils are energized simultaneously.

22. (New) The integrated electric motor and drive of claim 21, further comprising:

a switching network coupled between the energy storage capacitor and the three stator coils, the switching network being controlled by the switch controller to energize the three stator coils.

23. (New) The integrated electric motor and drive of claim 21, wherein the energy storage gap causes the electric motor to exhibit characteristics of an inductor.

24. (New) The integrated electric motor and drive of claim 21, wherein the energy storage capacitor causes the motor to store energy within the energy storage gap.

25. (New) The integrated electric motor and drive of claim 21, wherein the rotor includes a rotor coil coupled in series with the three stator coils.

26. (New) The integrated electric motor and drive of claim 21, wherein the LCR circuit oscillates when energized by the switch controller.

27. (New) The integrated electric motor and drive of claim 21, wherein the energy storage capacitor is configured to store an equal amount of electrical energy as the energy storage gap.

28. (New) An integrated electric motor and drive, comprising:

a motor including a stator and a rotor which define an energy storage gap therebetween, the stator including three stator coils and the rotor being supported within the motor to rotate relative to the three stator coils;

an energy storage capacitor coupled in series with the three stator coils and the energy storage gap to form a resonant LCR circuit;

means for detecting a rotational position of the rotor with respect to the three stator coils; and

means for energizing the three stator coils based on the rotational position of the rotor, the three stator coils being energized at one-third duty cycle such that the rotor field is normal to the stator field by about 90° and no two stator coils are energized simultaneously.

29. (New) The integrated electric motor and drive of claim 28, wherein the energy storage gap causes the electric motor to exhibit characteristics of an inductor.

30. (New) The integrated electric motor and drive of claim 28, wherein the energy storage capacitor causes the motor to store energy within the energy storage gap.

31. (New) The integrated electric motor and drive of claim 28, wherein the rotor includes a rotor coil coupled in series with the three stator coils.

32. (New) The integrated electric motor and drive of claim 28, wherein the LCR circuit oscillates when energized.

33. (New) The integrated electric motor and drive of claim 28, wherein the energy storage capacitor is configured to store an equal amount of electrical energy as the energy storage gap.